

UNCLASSIFIED

AD NUMBER

AD860347

LIMITATION CHANGES

TO:

Approved for public release; distribution is unlimited. Document partially illegible.

FROM:

Distribution authorized to U.S. Gov't. agencies and their contractors; Critical Technology; 10 AUG 1969. Other requests shall be referred to Army Chief of Staff Force Development, FOR-OT-UT, Washington, DC 20310. Document partially illegible. This document contains export-controlled technical data.

AUTHORITY

ago, d/a ltr, 29 apr 1980

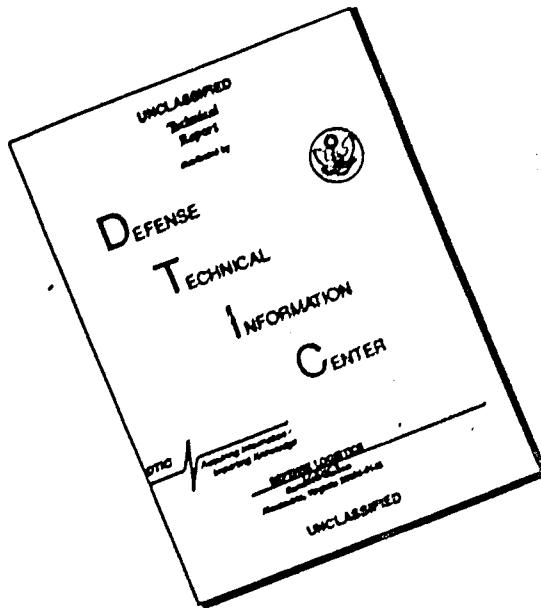
THIS PAGE IS UNCLASSIFIED

THIS REPORT HAS BEEN DELIMITED  
AND CLEARED FOR PUBLIC RELEASE  
UNDER DOD DIRECTIVE 5200.20 AND  
NO RESTRICTIONS ARE IMPOSED UPON  
ITS USE AND DISCLOSURE.

DISTRIBUTION STATEMENT A

APPROVED FOR PUBLIC RELEASE;  
DISTRIBUTION UNLIMITED.

# **DISCLAIMER NOTICE**



**THIS DOCUMENT IS BEST  
QUALITY AVAILABLE. THE COPY  
FURNISHED TO DTIC CONTAINED  
A SIGNIFICANT NUMBER OF  
PAGES WHICH DO NOT  
REPRODUCE LEGIBLY.**



## FOR OFFICIAL USE ONLY

DEPARTMENT OF THE ARMY  
OFFICE OF THE ADJUTANT GENERAL  
WASHINGTON, D.C. 20310

IN REPLY REFER TO  
AGDA (M) (1 Oct 69)

FOR OT UT 693052

3 October 1969

SUBJECT: Operational Report - Lessons Learned, Headquarters, 35th Engineer Battalion, Period Ending 31 July 1969

### SEE DISTRIBUTION

1. Subject report is forwarded for review and evaluation in accordance with paragraph 5b, AR 525-15. Evaluations and corrective actions should be reported to ACSFOR OT UT, Operational Reports Branch, within 90 days of receipt of covering letter.
2. Information contained in this report is provided to insure appropriate benefits in the future from lessons learned during current operations and may be adapted for use in developing training material.

BY ORDER OF THE SECRETARY OF THE ARMY:

ROBERT E. LYNCH  
Colonel, AGC  
Acting The Adjutant General

1 Incl  
as

### DISTRIBUTION:

#### Commanding Generals

US Continental Army Command  
US Army Combat Developments Command

#### Commandants

US Army War College  
US Army Command and General Staff College  
US Army Air Defense School  
US Army Armor School  
US Army Aviation School  
US Army Engineer School  
US Army Field Artillery School  
US Army Infantry School  
US Army Ordnance School  
US Army Quartermaster School  
US Army Transportation School

Copies furnished:  
Office, Chief of Staff, US Army

Reproduced by the  
CLEARINGHOUSE  
for Federal Scientific & Technical  
Information Springfield Va. 22151

D D C  
RECORDED  
OCT 21 1969  
RECORDED  
S

Protective marking cancelled when  
separated from inclosure.

### UNCLASSIFIED REPORT

DISTRIBUTION NO FOREIGN WITHOUT APPROVAL OF  
ASSISTANT CHIEF OF STAFF FOR FORCE DEVELOPMENT  
(ARMY) ATTN FOR OT UT WASHINGTON, D.C. 20310

## FOR OFFICIAL USE ONLY

13

# FOR OFFICIAL USE ONLY

DEPARTMENT OF THE ARMY  
HEADQUARTERS, 35TH ENGINEER BATTALION (COMBAT)  
APO San Francisco 96320

EGFF-OP

10 August 1969

SUBJECT: Operational Report of 35th Engineer Battalion (Combat) for Period  
Ending 31 July 1969, RCS CSFOR-45 (R1)

THRU: Commanding Officer  
34th Engineer Group (Const)  
APO 96320

Commanding General  
20th Engineer Brigade  
APO 96491

Commanding General  
USA Engineer Command Vietnam (Prov)  
ATTN: AVCC-P&O  
APO 96491

Commanding General  
United States Army, Vietnam  
ATTN: AVHCC-DST  
APO 96375

Commander in Chief  
United States Army, Pacific  
ATTN: GPOP-DT  
APO 96558

TO: Assistant Chief of Staff for Force Development  
Department of the Army (ACSFOR-DA)  
Washington, D.C. 20310

## 1. Section 1. Operations: Significant Activities.

During the period 1 May 1969 to 31 July 1969, the 35th Engineer Battalion (Combat) had as its primary mission the continuation of the major/minor repair of Highway QL-4 from Can Tho to Soc Trang which was initiated on 1 February 1968.

The project directives CD-98-233-LC-034 (Can Tho to Thanh Hoa, 13.5 kilometers) and CD-98-234-LC-034 (Thanh Hoa to Soc Trang, 46.4 kilometers) required  
**FOR OT UT**  
**693052**

Inclosure

FOR OFFICIAL USE ONLY

## FOR OFFICIAL USE ONLY

that the road be restored to its original capability to sustain the volume and weight classes of traffic for which it was originally designed and then be surfaced with a Double Bituminous Surface Treatment (DBST). Original design criteria was an all weather, 5 meter (16 feet) wide, Class 20, light traffic road. By the end of July, the project was 91% complete with the following work having been accomplished during the quarter:

1. Patched 9.7 kilometers of existing pavement.
2. Scarified, added 3"(-) base course, shaped, and compacted 12.5 km of base course to a CBR of 100.
3. Applied 15.4 kilometers of DBST.
4. Installed 12 culverts.
5. Constructed 11 culvert headwalls.

This construction utilized the following quantities of materials:

|                          |                             |
|--------------------------|-----------------------------|
| 1. 3"(-) rock            | 23,350 cubic yards          |
| 2. 3/4" rock             | 9,660 cubic yards           |
| 3. 3/8" rock             | 990 cubic yards             |
| 4. Asphalt               | 113,680 gallons             |
| 5. Concrete              | 43 cubic yards              |
| 6. Corrugated Metal Pipe | 622 linear feet             |
| 7. Asphaltic Concrete    | 437 tons (pothole patching) |

During this quarter the battalion also had the following secondary missions:

1. The construction of three "Delta Stagefields" to provide ammunition and fuel storage facilities for aircraft supporting tactical operations in the Delta.
  - a. The first "Delta Stagefield" to be completed was located at Soc Trang (OS-210-5466-3-21). The project was initiated by D Company on 22 March, was completed on 7 May, and included the hauling of 13,268 cu yards of fill for berms and the installation of 8000 sq feet of M8A1 matting.
  - b. The second "Delta Stagefield" to be completed was located at Ca Mau (OS-210-5466-2-21). The project was initiated by D Company on 2 May and completed on 14 June. The scope of work included the hauling of 19,258 cu yds of fill for berms, the installation of 2-250 barrel storage tanks for petroleum products, and the placing of 10,750 sq feet of M8A1 matting.
  - c. The third "Delta Stagefield", located at Bac Lieu (OS-210-5466-1-21), was initiated on 22 April by B Company and due to the monsoon rains was still under construction at the end of the reporting period. The project consisted of the hauling of 14,331 cu yds of fill for berms, the stabilization of 10,000 sq feet of ammo pads, and the placing of over 4000 sq feet of M8A1 matting.
2. The battalion continued unloading operations at the Soc Trang, Phung Hiep, and An Thanh barge sites.
  - a. While still performing normal unloading operations, the Soc Trang barge site was expanded to increase it's offloading capabilities. The 523rd

Inclosure

## FOR OFFICIAL USE ONLY

## FOR OFFICIAL USE ONLY

Port Construction Company, working under the operational control of Company A, 35th Engineer Battalion (Combat), initiated the wharf expansion on 27 May and the project was completed on 17 July. The expansion of the wharf included the construction of four, timber-pile dolphins, and addition of a 20 foot wide extension to the existing rock offloading pier. The extension required the driving of 31 creosoted timber piles in two pile bents with 12" x 12" timbers being used for the pile caps and stringers. A new 4" x 8" decking was placed on the wharf and a new 3" x 12" wearing surface was placed over both the new extension and the existing pier.

A Company continued the stabilization of the 2.7 kilometer access road to the Soc Trang Barge Site. The project was 85% complete at the end of the reporting period with the following materials being used during the quarter:

|            |                      |
|------------|----------------------|
| Cement     | 4148 bags            |
| Lime       | 4668 bags            |
| CMP        | 32 feet of 30" pipe  |
| 3"(-) rock | 325 cu yds           |
| Asphalt    | 1200 gallons of MC70 |

The Soc Trang Barge Site averaged offloading 8800 tons of rock per month during the quarter.

b. B Company continued operation of the An Thanh Barge Site and since 29 April has averaged offloading 3100 tons of rock per month.

c. D Company continued rock unloading operations at Phung Hiep averaging 6600 tons per month since 5 May.

3. The battalion was assigned the mission of stabilizing and maintaining the LST beach landing site at Binh Thuy on 15 May (OS-210-5613-2-21). The battalion will be responsible for the maintenance of this beach to insure continuous cargo offloading throughout the monsoon season. During the reporting period the battalion placed and compacted 888 cu yds of 3"(-) rock and 295 cu yds of 3/4" rock on the LST Beach.

4. The battalion was assigned two additional operational support missions during the quarter.

a. The first was the upgrading and construction of the Regional Forces Training Facilities at Tan An (OS-210-6580-0-20). The project was initiated by HHC (Heavy Equipment Platoon) on 11 June and was completed on 24 June. The mission consisted of hauling 18,932 cu yds of fill, constructing 1425 linear meters of berms for rifle ranges, and the widening and compacting of 595 yds of access road.

b. The second was the repair of the Ben Tre airfield (OS-210-5786-0-20) which was initiated by C Company on 7 July and was completed on 12 July. This project required the removal of 260 panels of AM2 matting from the airfield runway, the stabilizing of 812 sq feet of subbase which was washing out, and then replacing the matting.

T41651RE

## FOR OFFICIAL USE ONLY

In conjunction with the ARVN/US Cooperative Program, the battalion initiated an equipment operators training program for members of the 7th ARVN Engineer Group (Const) on 12 May. The training program consisted of four weeks of extensive training in the operation and maintenance of the 5-ton dump truck, the grader, the 10-ton steel wheel roller, and the scoop loader. Graduates of the school during the quarter included 8 scoop loader operators, 8 roller operators, 4 grader operators, and 5 5-ton dump truck operator.

The only significant move during the quarter was the D Company (2nd platoon) move to Ca Mau to work on the Delta Stagefield project.

During the reporting period, the battalion suffered 1 KIA and 2 WIA in addition to the loss of several vehicles. These were the results of mines, booby traps, and sniper fire along QL-4 AOR.

Rain showers occurred intermittently throughout the reporting period with rain and wet working conditions having a marked effect on the major/minor repair of QL-4 and other projects undertaken after 1 June.

The battalion strength decreased from the preceding quarter to 95% in July. The 517th Engineer Company (LE) suffered a marked decrease in strength to 61% in July.

Critical MOS shortages in the battalion included:

12B4O (Squad Leader) - short 19  
62N4O (Const Mach Supervisor) -- short 7

The battalion had 120 extensions during the quarter and 148 awards and decorations were awarded to members of the battalion.

During the reporting period the battalion spent 79 days on projects and 13 days in training.

### 2. Section 2, Lessons Learned: Commanders's Observations, Evaluations and Recommendations.

a. Personnel. None

b. Operations.

#### (1) Rapid and Expedient Removal and Replacement of AM2 Matting.

(a) OBSERVATION: During a repair project, it was necessary to remove a section of AM2 panels from the center of a runway to repair the subbase. The necessary welding equipment was not available to fabricate a puller panel as shown in figure 42 of DA Pam 525-3-1, Lessons Learned.

(b) EVALUATION: A satisfactory end puller panel was made from a short panel of AM2 matting by drilling 2 holes 11 inches from the end and

## FOR OFFICIAL USE ONLY

4 inches from each side (see figure 1). Lifting shackles were inserted through the holes and a cable run through the shackles to a 5-ton truck which then pulled the key row of panels out of the runway. This type of puller panel can be used to reconnect sections of runway. However 2 rows of AM2 must be used as a key section and the puller panel centered on them to allow room for the shackles on each side (see figure 2).

(c) RECOMMENDATION: To make a puller panel for separating AM2 matting, utilize the design shown in figure 1.

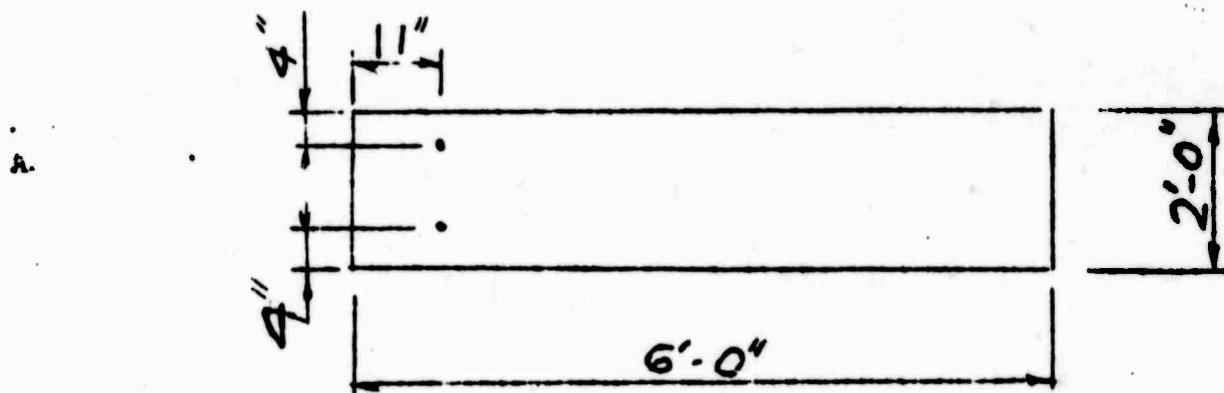


Figure 1  
AM2 Puller Panel

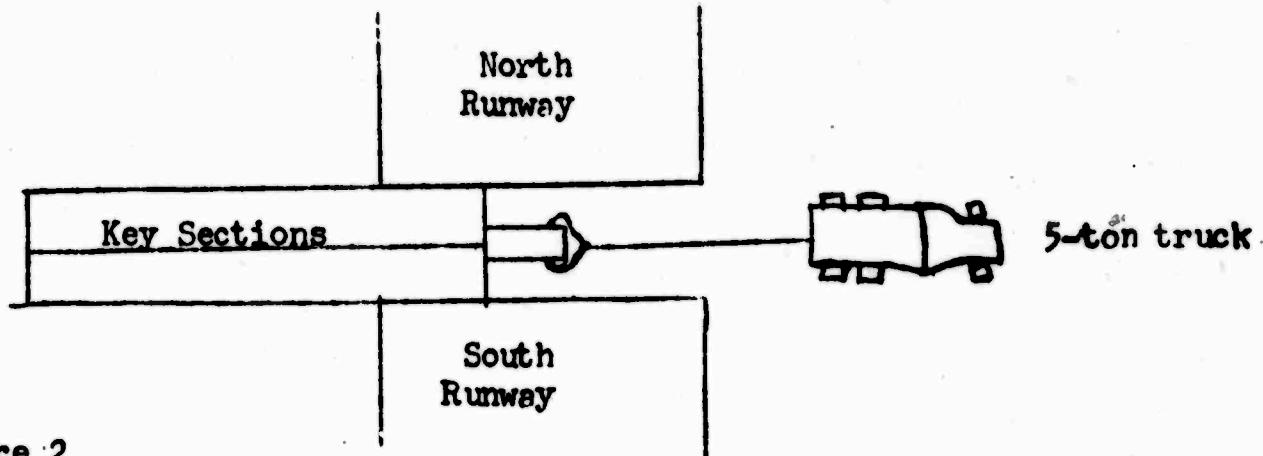


Figure 2  
Reconnecting AM2 with Puller Panel

(2) Prevention of Swing Clutch Wear on 20-ton RT Crane.

(a) OBSERVATION: Excessive swing clutch wear has been observed on 20-ton RT cranes which are used for unloading rock from a barge.

(b) EVALUATION: When a crane operates on a surface which is sloped to any appreciable extent swing clutches often encounter excessive wear. This was found to occur on cranes working on a barge while unloading rock in the Delta. As the tides rise and fall the barge moves appreciably and often rests on the canal bottom causing the crane to be inclined considerably.

(c) RECOMMENDATION: A small line level placed in the cab to measure deviations in levels of greater than 5 or 6 degrees will tell the operator when it might be detrimental to continue operation of the crane.

## FOR OFFICIAL USE ONLY

### (3) Prevention of Crane Booms Being Stuck in the Vertical Position.

(a) OBSERVATION: Crane booms are difficult to lower from the extreme vertical position.

(b) EVALUATION: The boom of a crane should not normally be raised to the extreme vertical position as an inexperienced operator may not know how to get it back down.

(c) RECOMMENDATION: Removable extensions should be placed on the boom stops which would stop the boom's upward movement at least 3 degrees from the vertical position.

### (4) Increasing the Mileage on Grader Tires.

(a) OBSERVATION: Grader tires have a short life span under rough working conditions on roads in the Delta.

(b) EVALUATION: Due to rough work on the road, tubeless grader tires often end up with broken valve stems, rendering the tire unusable.

(c) RECOMMENDATION: The tire can be made usable again by inserting an inner tube from a 5-ton dump truck tire. The valve stem is shorter and is less apt to break.

### (5) Prevention of Cutting Out of Blowers on Asphalt Distributor Model D-32.

(a) OBSERVATION: A cutting out of the blowers on the asphalt distributor has been observed on Model D-32.

(b) EVALUATION: The fuel line running from the fuel tank to the burning unit that heats the asphalt was found to be running between the asphalt tank and the auxiliary engine on the rear of the asphalt distributor. As a result when the asphalt tank became heated, it gave off enough heat to vaporize the fuel in the fuel line resulting in a flame-out in the blower unit.

(c) RECOMMENDATION: By routing the fuel line from the fuel tank under the auxiliary engine to the burner unit, the lines are exposed to less heat which will prevent fuel vaporization and flame-out in the burner unit.

- c. Training. None
- d. Intelligence. None
- e. Logistics. None
- f. Organization. None

**FOR OFFICIAL USE ONLY**

g. Other. None

3. Section 3, Headquarters Department of the Army, Survey Information. None

-1-Incl-

as

Incl wd Hq, DA

*James W. Ray*  
JAMES W. RAY  
LTC, CE  
Commanding

## FOR OFFICIAL USE ONLY

EGF-OP (10 Aug 69) 1st Ind

SUBJECT: Operational Report of 35th Engineer Battalion (Combat) for Period Ending 31 July 1969, RCS CSFOR-65 (R1)

DA, HEADQUARTERS 34TH ENGINEER GROUP (CONST), APO 96320 13 August 1969

TO: Assistant Chief of Staff for Force Development, Department of the Army, Washington, D.C. 20310  
Commanding General, 20th Engineer Brigade, ATTN: AVBI-CS, APO 96491

1. The subject report submitted by the 35th Engr Bn has been reviewed by this HQ and is considered comprehensive and of value for documentation and review of the reporting unit's activities and experiences.

2. This HQ concurs with the submitted report with the following comments:

a. Ref para 2b(1), page 4: This method is an expedient only. The puller panel described in DA Pam 525-3-1 should be used whenever possible.

b. Ref para 2b(2), page 5: Concur that crane alignment should be checked frequently to insure swing clutch does not receive excessive wear.

c. Ref para 2b(3), page 6: Concur that booms upward motion should be restricted so as not to reach a complete vertical position, particularly when inexperienced personnel are operating crane.

d. Ref para 2b(5), page 6: Concur, this should be followed when necessary.

FOR THE COMMANDER:

DONALD L WHEELER  
Major, AGC  
Adjutant

CF:

CO, 35th Engr Bn

## FOR OFFICIAL USE ONLY

AVBI-OS (10 Aug 69) 2nd Ind  
SUBJECT: Operational Report of the 35th Engineer Battalion (Combat)  
for the Period Ending 31 July 1969, RCS CSFOR-65(R1)

DA, HEADQUARTERS, 20TH ENGINEER BRIGADE, APO 96491

TO: Commanding General, United States Army Vietnam,  
ATTN: AVHGC-DST, APO 96375

1. Submitted in accordance with USARV Regulation 525-15, dated 13 April 1968.
2. Subject report for the 35th Engineer Battalion (Combat) has been reviewed and is considered adequate.

FOR THE COMMANDER:

*[Signature]*  
S. B. KENNEDY  
Major, AGC *sent adj.*  
Adjutant

Copies Furnished:  
CO, 34th Engr Gp  
CO, 35th Engr Bn

AVHGC-DST (10 Aug 69) 3d Ind  
SUBJECT: Operational Report of 35th Engineer Battalion (Combat) for  
Period Ending 31 July 1969, RCS CSFCK-65 (kl)

HEADQUARTERS, UNITED STATES ARMY, VIETNAM, APO San Francisco 96375 12 SEP 69

TO: Commander in Chief, United States Army, Pacific, ATTN: GPOP-DT,  
APO 96558

1. This headquarters has reviewed the Operational Report-Lessons Learned  
for the quarterly period ending 31 July 1969 from Headquarters, 35th  
Engineer Battalion (Combat).

2. Comments follow:

a. Reference item concerning "Prevention of Crane Booms Being Stuck  
in the Vertical Position," section II, page 6, paragraph 2b(3); 1st  
Indorsement, paragraph 2c; concur. The boom stop extension should be  
made of wood and should not require a modification to the boom.

b. Reference item concerning "Increasing the Mileage on Grader Tires,"  
section II, page 6, paragraph 2b(4); concur. The unit is advised that an  
inner tube from the M-39 bridge truck is a more acceptable substitute.

FOR THE COMMANDER:

B. A. GOODWIN

CPT, AGC

Assistant Adjutant General

Cy furn:

35th Engr Bn (Combat)  
20th Engr Bde

GPOP-DT (10 Aug 69) 4th Ind  
SUBJECT: Operational Report of HQ, 35th Engineer Battalion  
(Combat) for Period Ending 31 July 1969, RCS  
CSFOR-65 (R1)

HQ, US Army, Pacific, APO San Francisco 96558 18 SEP 69

TO: Assistant Chief of Staff for Force Development,  
Department of the Army, Washington, D. C. 20310

This headquarters concurs in subject report as indorsed.

FOR THE COMMANDER IN CHIEF:



C. L. SHORIN  
CPT, AGC  
Asst AG

**UNCLASSIFIED**

Security Classification

**DOCUMENT CONTROL DATA - R & D**

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

|   |   |
|---|---|
| 1. ORIGINATING ACTIVITY (Corporate author)<br><br>HQ, OACSFOR, DA, Washington, D.C. 20310 | 2a. REPORT SECURITY CLASSIFICATION<br><br>FOR OFFICIAL USE ONLY |
| 2b. GROUP   |   |

3. REPORT TITLE

Operational Report - Lessons Learned, HQ, 35th Engineer Battalion

4. DESCRIPTIVE NOTES (Type of report and inclusive dates)

Experiences of unit engaged in counterinsurgency operations, 1 May 69 to 31 July 69.

5. AUTHOR(S) (First name, middle initial, last name)

CO, 35th Engineer Battalion

|                                      |   |                 |
|--------------------------------------|---|-----------------|
| 6. REPORT DATE<br><br>10 August 1969 | 7a. TOTAL NO. OF PAGES<br><br>14  | 7b. NO. OF REFS |
| 8a. CONTRACT OR GRANT NO.            | 8b. ORIGINATOR'S REPORT NUMBER(S)   |                 |
| 9a. PROJECT NO.<br><br>N/A           | 9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)<br><br>693052 |                 |
| c.<br><br>d.                         |   |                 |

10. DISTRIBUTION STATEMENT

|                                    |   |
|------------------------------------|---|
| 11. SUPPLEMENTARY NOTES<br><br>N/A | 12. SPONSORING MILITARY ACTIVITY<br><br>OACSFOR, DA, Washington, D.C. 20310 |
|------------------------------------|---|

13. ABSTRACT